

MEAN'S FORD BRIDGE

(Burnt Mill Bridge)

(Ralph Stover State Park Bridge)

Spanning Tohickon Creek at Stump Road, Ralph Stover State
Park

Point Pleasant

Bucks County

Pennsylvania

HAER PA-623

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

U.S. Department of the Interior

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MEAN'S FORD BRIDGE (Burnt Mill Bridge) (Ralph Stover State Park Bridge)

HAER No. PA-623

LOCATION: Spanning Tohickon Creek at Stump Road, Ralph Stover State Park, Point Pleasant, Bucks County, Pennsylvania
UTM: 18.491755.4476014, Lumberville, Pennsylvania Quad.

STRUCTURAL
TYPE: Boxed Howe pony truss covered bridge

DATE OF
CONSTRUCTION: c. 1860s, rehabilitated 1993

DESIGNER/
BUILDER: Unknown

PRESENT OWNER: Pennsylvania Department of Conservation & Natural Resources

PREVIOUS USE: Vehicular bridge

PRESENT USE: Pedestrian bridge

SIGNIFICANCE: Once a common feature of the nineteenth century landscape, boxed pony truss bridges are now nearly extinct. Mean's Ford Bridge is the longest of seven surviving boxed pony truss bridges in North America.

HISTORIAN: Researched and written by Lola Bennett, November 2005

PROJECT
INFORMATION: The National Covered Bridges Recording Project is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. HAER is administered by the Historic American Buildings Survey/Historic American Engineering Record, a division of the National Park Service, U.S. Department of the Interior. The Federal Highway Administration funded the project.

Chronology

- 1787 Pennsylvania becomes the second state admitted to the Union.
- 1793 First bridge built at this site.
- 1805 America's first covered bridge built at Philadelphia.
- 1840 William Howe patents Howe truss.
- 1840s Grist mill established near Mean's Ford on Tohickon Creek.
- 1848 Bucks County Court approves construction of a bridge at this location.
- 1850 Road and crossing appear on W.E. Morris's "Map of Bucks County."
- 1860s Bucks County building Howe and Town truss covered bridges.
- 1870s Ralph Stover purchases mill site at this location.
- 1880 Stover's Mill destroyed by fire; site subsequently known as "Burnt Mill(s)."
- 1893 Bucks County Bridge Book describes Burnt Mill Bridge: "Spans Tinicum Creek on road from Red Hill to Erwinia. 80 feet long [sic] and 16 feet wide open wooden structure."
- 1931 Ralph Stover's granddaughters, Clara and Florence Troemner, give property to Commonwealth of Pennsylvania for use as a state park.
- 1933 Civilian Conservation Corps builds recreational facilities at Ralph Stover State Park.
- 1935 Ralph Stover State Park opens.
- 1993 Mean's Ford Bridge rehabilitated.
- 2003 Mean's Ford Bridge recorded by the Historic American Engineering Record.

Introduction

Pennsylvania is the birthplace of the American covered bridge. In 1805 Timothy Palmer, a master carpenter from Massachusetts, built the 500' Permanent Bridge over the Schuylkill River at Philadelphia.¹ Shortly after its erection, at the urging of the bridge company, Palmer weatherboarded and roofed the structure to protect the trusses from the weather, making the Permanent Bridge the first covered bridge in the United States.² By 1810, covering timber bridges was conventional practice in America.³

Pennsylvania was also the proving ground for many early timber truss designs, among them several bridges of unprecedented size, such as Lewis Wernwag's 340' Colossus (1812) and Theodore Burr's 360' McCall's Ferry Bridge (1815). These early bridges served as prototypes for thousands of covered bridges that were built across the United States in the nineteenth century.

During the height of the covered bridge period (ca.1830-1880), Pennsylvania had an estimated 1,500 covered bridges.⁴ In the twentieth century, the majority of these were lost to decay, flood, arson and progress. Today with 209 examples, Pennsylvania holds the distinction of having the most covered bridges of any state in the United States.⁵

Description

Mean's Ford Bridge is a two-span, 178' boxed pony Howe truss on a mortared stone pier and abutments. Each span is 88'-8" long. The bridge is 6'-6" high and the roadway is 12' wide.

The sixteen-panel trusses are framed in the manner patented by William Howe in 1840. The bottom chord is four 4"x12" timbers blocked and bolted together. The upper chord is a 9"x10" timber flanked by 5"x9" timbers. Diagonal braces are paired 6"x7" sticks crossing within each panel. The braces bear on triangular castings. A 1" to 1-1/2" diameter rod passes through the castings and chords at each panel point. The rods are fastened with a plate and nut at each end.

The deck system is comprised of glulam floor beams seated on top of the lower chord approximately two feet apart. There are eleven lines of 4"x6" stringers on top of the floor beams. Plank decking is laid transversely on the stringers. Lower lateral bracing consists of round tie rods placed transversely between the chords at each panel point and square bars crossing between them.

¹ The Permanent Bridge lasted in its covered state until 1850 when Daniel Stone's Market Street Bridge replaced it.

² Although covered bridges were built at least as early as the fourteenth century in Europe, they were not commonly built until after Palmer used the idea in the United States.

³ Henry Grattan Tyrrell, *History of Bridge Engineering* (Chicago: H.G. Tyrrell, 1911), p.121.

⁴ Richard Sanders Allen, *Covered Bridges of the Middle Atlantic States* (Brattleboro: Stephen Greene Press, 1959), p.51.

⁵ National Society for the Preservation of Covered Bridges, *World Guide to Covered Bridges* database printout, 2001.

The boxed housing is board and batten siding with a peaked cap. There are heavily mortared stone wingwalls along steep graded approaches.

History

This was the site of a mid-eighteenth century water-powered grist mill, originally known as Fry's Mill and later as Stover's Mill.⁶ After Stover's Mill burned in 1880, the site was simply known as "Burnt Mill(s)." Remnants of the mill and mill race are still visible near the bridge.

According to Bucks County records, the first bridge at this site, on the main road from Lowry & Erwin's Ferry on the Delaware (Erwinna) to Philadelphia was reportedly built in 1793. Bucks County Commissioners approved construction of a bridge at this location in 1848, but records contain no further details on that bridge.

In the early 1860s, Bucks County Commissioners specified the construction of wooden Howe truss bridges. According to historian George Hart, the county at one time had four "open covered" bridges, built in the 1860s, the best known being at Burnt Mill.⁷ While county records do not clearly identify this structure, physical evidence also suggests the likelihood of the 1860s date.

In 1931, Stover heirs gave the abandoned mill property to the Commonwealth of Pennsylvania for development of a state park. In 1933-34, Civilian Conservation Corps crews developed the site and built recreational facilities. Ralph Stover State Park opened to the public in 1935. While the bridge is no longer open to vehicular traffic, it is the focal point of the area used for canoeing, fishing and picnicking and provides access to numerous recreation trails and the "High Rocks" climbing area.

Design

The wood pony truss bridge saw widespread use in America during the nineteenth century. Housing or "boxing" the trusses could increase the lifespan of these structures. This is the longest and oldest of seven surviving boxed pony truss bridges in North America:

⁶ *Combination Atlas Map of Bucks County, Pennsylvania*, 1876, shows J. Stover and S. Stover as property owners at this site. The Stover family owned a dozen mills along Tohicken Creek.

⁷ George Hart, "Covered Bridges in Bucks County," paper read before the New Town New Century Club, c.1945. Bucks County Historical Society files.

Surviving Boxed Pony Truss Bridges in North America

38-09-P1	Mean's Ford Bridge	Bucks County, PA	c1860s	(2) 88' boxed Howe pony truss	
07-04-01	Comstock Bridge	Middlesex County, CT	1873	80' boxed Howe pony truss	
29-04-P2	Snyder Brook Bridge	Coos County, NH	1918	28' boxed Howe pony truss	B&M RR
29-04-P1	Moose Brook Bridge	Coos County, NH	1918	39' boxed Howe pony truss	B&M RR
29-09-P1	Rollins Farm Bridge	Strafford County, NH	1929	35' boxed Howe pony truss	B&M RR
29-06-P1	Livermore Bridge	Hillsborough County, NH	1937	52' boxed Town lattice pony truss	
61-02-P1	Pont Blanc	Abitibi-Ouest County, QC	1947	59' boxed Town lattice pony truss	

Sources

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